

Sending Seeds

How do seeds travel? Do different seeds use different methods of dispersal? Explore how seeds are dispersed through this design challenge activity.



Methods of Seed Dispersal

Wind- seeds dispersed by wind are usually small, and occasionally have a wing or feather like structure

Water- seeds dispersed by water must float and have a hard outer coating to protect the seed

Expulsion- seeds dispersed by expulsion usually house their seeds in pods that are opened due to environmental stimuli such as heat, or drying out

Animal carriers- seeds dispersed by animal carriers typically get stuck in animal fur due to barb like structures, or are eaten and dispersed due to their fleshy fruit structure

Part One- Collection and Sorting

Materials

An old, clean, adult size sock (a mismatch from the dryer is perfect!)
Large paper or cloth to sort

Procedure

1. Head to your backyard or local natural area
2. Place your old sock over one of your shoes
3. For 5-10 minutes, walk around the area, all the while collecting on your sock
4. Spread your paper or cloth out on the ground, and begin removing your collection from the sock.
5. Sort the seeds you find by how you think they might move: wind, water, expulsion, and animal carriers

Guiding Questions

1. What did the seeds that you found look like?
2. How do you know or how do you guess which seeds move by each mechanism? Appearance, texture, size? What characteristics did you use to determine a seed's dispersal method?
3. Based on the seeds you have seen that nature created, do you think you could build your own seeds that traveled each of the four ways? What materials would you want/need? What would each design look like? Make a list of materials and sketch a design for one (or more if you want) of the four types of seed dispersal: wind, water, expulsion, and animal carriers.

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Part Two- Design Challenge

Materials

Your list of materials from Part One

Other suggested materials could include:

- Recycled paper
- Recycled cardboard
- Recycled plastic (bottles, jugs, etc)

Scissors

Glue

Tape



Procedure

1. Following your sketched design, build a seed that you think could travel by one of the four seed dispersal methods.
2. Test your design!
 - a. Wind test: Can your seed float through the air and travel 5ft?
 - b. Water test: Can you seed float in water for 5 minutes without breaking down, sinking, or deteriorating at all?
 - c. Expulsion test: Can your seeds travel 5ft when released from the pod?
 - d. Animal carrier test: Can your seed attach to an animal and travel 10ft?
 - i. Please do not test your design on wild animals. Use a human wearing textured fabric such as a fuzzy sweater, scarf or gloves!
3. If your designs did not work go back to the drawing board! Ask yourself some questions:
 - a. Wind: Do you need a lighter seed, or a better “wing” or “feather”
 - b. Water: Does your seed have enough of a protective coat? Is it too heavy to float?
 - c. Expulsion: Did your seed pod not pop open? Was the materials inside small enough to fly out of the pod?

Guiding Questions

1. How do a seed’s shape and size affect its dispersal?
2. Why is it important for seeds to disperse at all?
3. Why would plants have adapted various methods of seed dispersal? Why not just rely on one method?